

ABSTRACT

Disclosed is an apparatus and system for non-invasively detecting and determining the heart rate and respiration rate of a patient, while the patient is within their sleep environment, suitable for both home and hospital monitoring, which includes an array of at least two pressure-sensitive sensors, positioned under the mattress, which gathers data from the patient corresponding to the vertical and horizontal movements of the body, and wherein the data from each sensor is collected, filtered, and analyzed and finally, the difference between the results gathered from each sensor detects and determines heart and respiration rates.